RaceGrade Specification

Document Number		RG_SPEC-005489	
Title		RaceGrade GPS v3	
Revision	**Date**	**Prepared By**	**Change History**
1.0	12/14/2018	Simon Wagner	Initial Revision

Part Number	GPS Data Rate	Multi-GNSS
M GPS BL V3	10Hz CAN or GPS	NO
M GPS BL V3-10MG	10Hz CAN or GPS	YES
M GPS BL V3-20	20Hz CAN or GPS	NO
M GPS BL V3-20MG	20Hz CAN or GPS	YES

Introduction

This GPS device provides a true non-interpolated 10 Hz or 20 Hz output via CAN or serial communications. It is enclosed in a motorsport quality aluminium case that is the same form factor as the previous v2 units. The v3 variant incorporates an all new GPS engine capable of multi band GPS reception. The 'Multi GNSS' option is required to use this extended capability. Multi GNSS allows up to 49 satellites to be tracked across three different GPS constellations (USA / GLONASS / BeiDou) along with the spaced based augmentation system (SBAS) for sub meter positioning. An antenna capable of receiving multiple bands of GPS data is provided with the kit, but the pervious single band antenna will still work with the unit if only US satellites are to be tracked. All v3 GPS units employ proprietary internal software routines which maintain sub-meter DGNSS positioning for 40 minutes after SBAS correction loss should it occur.

These GPS units can be ordered in one of four variants. Once delivered the units cannot be updated in capability but firmware can be updated if required. A final option is to add RaceGel IP68 environmental intrusion protection to the GPS which is highly recommended in Marine and high vibration installations.

Specifications:

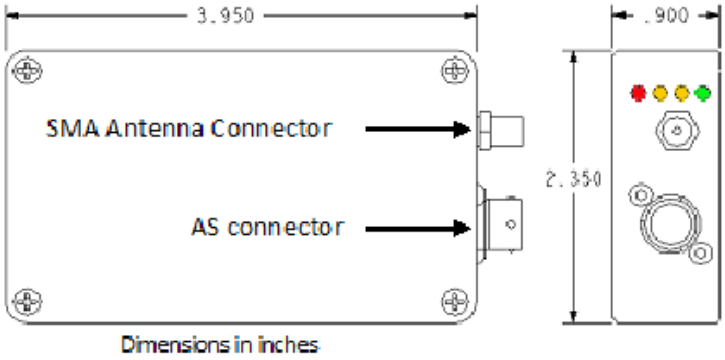
- 49-channel GPS engine capable of tracking US, Russian, & Chinese GPS constellations when the Multi GNSS option is purchased
- Horizontal accuracy < 0.7 meter at 95% with DGPS
- Battery backed location storage for faster start up
- Option IP68 RaceGel potting available for extreme environments or high vibration installations
- Update rate of 10 Hz or optional 20 Hz CAN and Serial
- Screw on SMA antenna connector.
- Supply Voltage: 6 to 18 VDC
- Current Consumption: 420 mA at 12v
- Temperature Range: -30° to 70° C
- Weight: 153 grams w/o antenna (227 grams w/IP68 option)
- Dimensions: 3.95 x 2.35 x 0.9 in, 100 x 60 x 23 mm

Output Streams:

- RS-232 serial at 57600 baud rate formatted NMEA GGA and RMC messages.
- CAN output for MoTeC devices (bus speed is 1 Mbit/s)

LED Indicators:

LED	Color	Function
PWR	RED	Power is applied
GPS	YEL	GPS satellites are being tracked
SBAS	YEL	Correction satellites are being tracked for differential position solution
DIFF	GRN	Differential position calculation in use which denotes high accuracy position state (>0.7m)



Connection:

Mating connector: ASL 606-05SN

pin 1 – Ground
pin 2 – RS-232 Tx
pin 3 – 12 volt supply
pin 4 – CAN Low
pin 5 – CAN High

Antenna:

- Dual Band GPS antenna
- 45 x 45 x 14.6mm
- Magnetic mount
- -30C to 80C operating temperature
- RG174 cable with SMA-Male connector
- 3m (+/- 150mm) long flying lead